LANCER

DISPENSING QUALITY FOR OVER 40 years 1967-2007

FLAVOR SELECT 22 (FS22) ICE BEVERAGE DISPENSER

Installation and Service Manual

LANCER
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San Antonio, Texas 78219

To order parts, call
Customer Service: 800-729-1500
Warranty/Technical Support: 800-729-1550
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ISO 9001:2000 Quality System Certified

Manual PN: 28-0580/02
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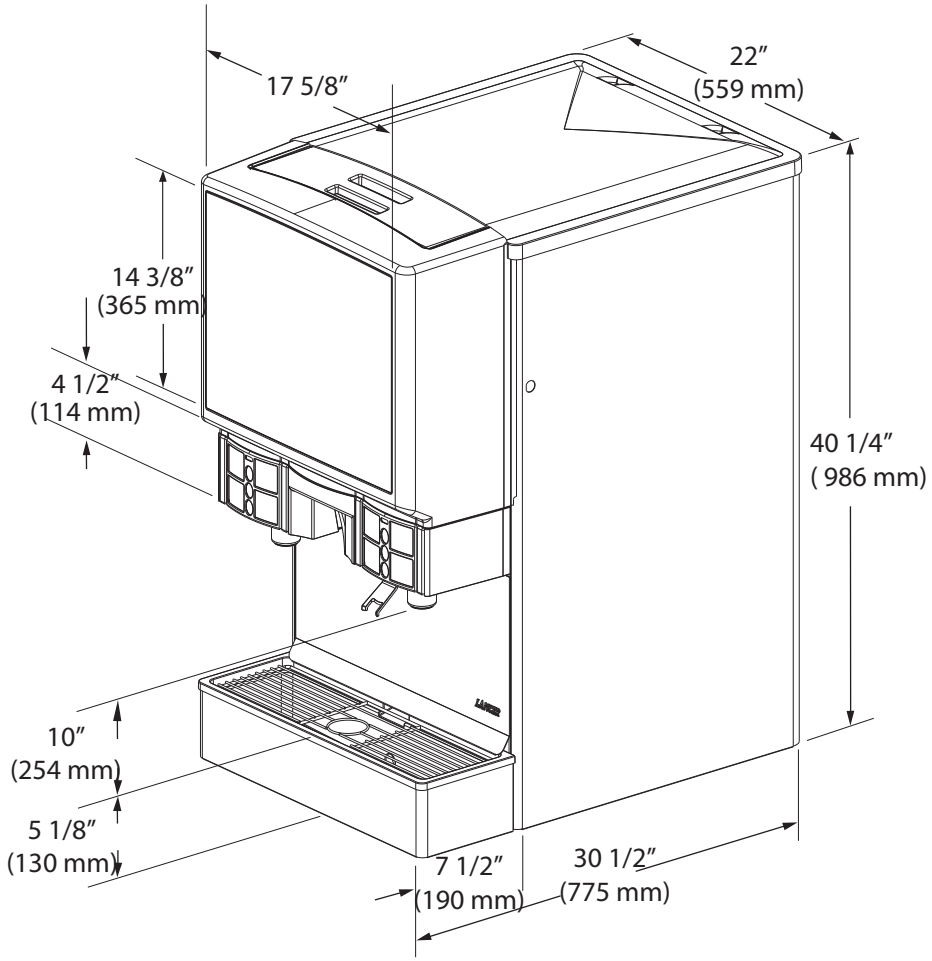
ABOUT THE FS22

The FS22 is designed using the highest quality materials and state-of-the-art technology providing our customers with consistent quality and a unique drink experience.

FS22 DISPENSERS

85-14408-06-2	ICE BEVERAGE DISPENSER, ABOVE COUNTER MULTIBRAND, 22 INCH WIDE, 8 BRANDS / 6 FLAVORS, 115V/60Hz	CUBED ICE
85-14408N-06-2	ICE BEVERAGE DISPENSER, ABOVE COUNTER MULTIBRAND, 22 INCH WIDE, 8 BRANDS / 6 FLAVORS, 115V/60Hz	PELLET ICE

FS22 SPECIFICATIONS



DIMENSIONS **Width:** 22 in (559 mm) **Depth:** 30.5 in (775 mm) **Height:** 40.25 in (1022 mm) **SPACE REQUIRED** **Left Side:** 1 in (25 mm) **Right side:** 1 in (25 mm) **Back:** 1 in (25 mm) **Top:** 6 in (152 mm) **Optional legs:** 4 in (102 mm) **ELECTRICAL** 115VAC/60Hz, 7AMPs, 805 Watts	**WEIGHT** **Without ice:** 280 lbs (127 kg) **With ice:** 480 lbs (218 kg) **Shipping:** 310 lbs (141 kg) **ICE** **Capacity:** 200 lbs (91 kg) **Dispensable:** 170 lbs (77 kg) **FITTINGS** **Water for carbonator inlet:** 3/8” barb **Plain water inlet:** 3/8” barb **Brand syrup inlets:** 3/8” barb **Injection flavor inlets:** 1/4” barb **CO_2 inlet:** 3/8” barb	**PLAIN WATER SUPPLY** **Min flowing pressure:** 75 PSIG (5.28 kg/cm^2, 5.16 BAR) **CARBONATOR WATER SUPPLY** **Min flowing pressure:** 25 PSIG (1.76 kg/cm^2, 1.72 BAR) **Max static pressure:** 50 PSIG (3.52 kg/cm^2, 3.45 BAR) **CARBON DIOXIDE (CO_2)** **Min pressure:** 70 PSIG (4.92 kg/cm^2, 4.83 BAR) **Max pressure:** 80 PSIG (5.62 kg/cm^2, 5.52 BAR)

PRE-INSTALLATION CHECKLIST

BEFORE GETTING STARTED

Each unit is tested under operating conditions and is thoroughly inspected before shipment. At the time of shipment, the carrier accepts responsibility for the unit. Upon receiving the unit, carefully inspect the carton for visible damage. If damage exists, have the carrier note the damage on the freight bill and file a claim with carrier. Responsibility for damage to the dispenser lies with the carrier.

POST MIX ACCESSORIES:

- ☐ CO_2 Regulator Set
- ☐ Beverage Tubing
- ☐ CO_2 Supply
- ☐ Water Booster
- ☐ Oetiker Clamps/Fittings
- ☐ Water Regulator

BIB SYSTEM:

- ☐ BIB Rack
- ☐ BIB Regulator Set
- ☐ BIB Connectors - ensure you have the correct connectors for syrup lineup.
- ☐ BIB Syrup Boxes

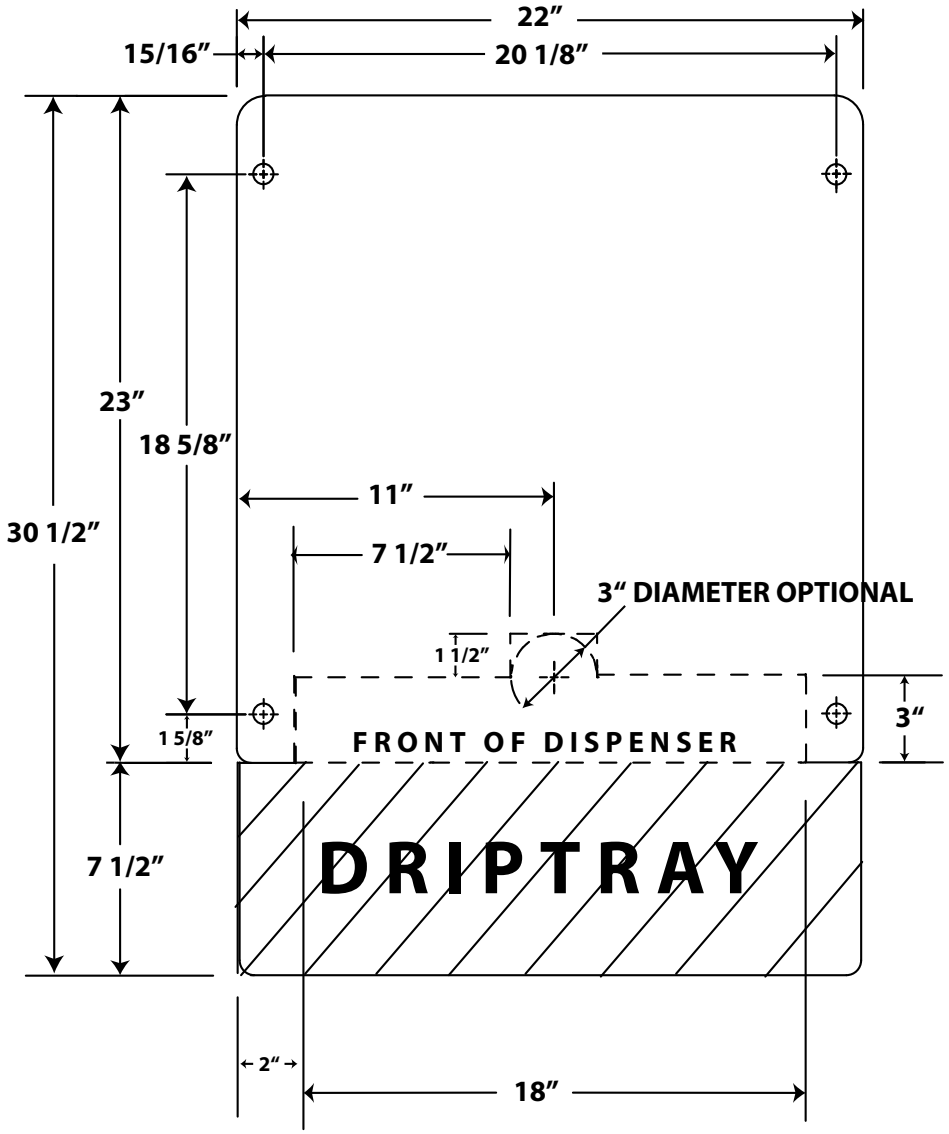
DOUBLE CHECK:

- ☐ Is the countertop level?
- ☐ Is there enough space to install the dispenser? Be sure to include space for a top-mounted ice machine, if necessary.
- ☐ Can the countertop support the weight of the dispenser? Be sure to include the weight of an ice machine (if necessary) plus the weight of the ice.
- ☐ Does the top-mounted ice machine have a minimum clearance on all sides?

CONSIDER THE LOCATION OF THE FOLLOWING BEFORE INSTALLATION:

- ☐ Water supply lines
- ☐ Drain
- ☐ Grounded electrical outlet
- ☐ Heating and air conditioning ducts
- ☐ Direct sunlight (avoid) or overhead lighting

FS22 COUNTER CUTOUT



CUT OUT DASHED AREA

OPTIONAL HOLES FOR FASTENING DISPENSER TO COUNTER WITH SCREWS

SAFETY

AUTOMATIC AGITATION

The dispenser is equipped with automatic agitation and will activate unexpectedly. Do not place hands or foreign objects in the ice storage compartment. Unplug the dispenser during servicing, cleaning, and sanitizing.

To avoid personal injury, do not attempt to lift the dispenser without assistance. For heavier dispensers, use a mechanical lift.

GROUNDING

The dispenser must be properly electrically grounded to avoid serious injury or fatal electrical shock. The power cord has a three-prong grounded plug. If a three-hole grounded electrical outlet is not available, use an approved method to ground the unit. Follow all local electrical codes when making connections. Each dispenser must have a separate electrical circuit. Do not use extension cords. Do not connect multiple electrical devices on the same outlet.

ALWAYS disconnect power to the dispenser before attempting any internal maintenance. The resettable breaker switch should not be used as a substitute for unplugging the dispenser from the power source to service the unit. Note: the keyswitch does not turn off power to the dispenser. It must be physically unplugged.

Only qualified personnel should service the internal components of the dispenser. Avoid any contact with water when plugging in the dispenser.

CARBON DIOXIDE

Carbon Dioxide (CO_2) is heavier than air and displaces oxygen. CO_2 is a colorless, noncombustible gas with a faintly pungent odor. High percentages of CO_2 may displace oxygen in the blood. Prolonged exposure to CO_2 can be harmful. Personnel exposed to high concentrations of CO_2 gas will experience tremors which are followed rapidly by a loss of consciousness and suffocation. Strict attention must be observed in the prevention of CO_2 gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, immediately ventilate the contaminated area before attempting to repair the leak.

The minimum/maximum ambient operating temperature for the dispenser is 40 to 90 degrees F.

The dispenser is for indoor use only.

ICE

Dispensers using cubed ice may also use pellet ice if properly configured (contact Lancer Customer Service or your Sales Representative for more information).

Lancer dispensers will not dispense shaved or flaked ice.

Do not use bagged ice. Bagged ice will damage components.

1. INSTALLATION

1.1 SELECTING A LOCATION FOR THE DISPENSER

MAKE SURE THE LOCATION MEETS THESE REQUIREMENTS:

A. Access to a dedicated, grounded 20 AMP electrical outlet.

B. Convenient to an open drain with access for soda, water, and syrup lines.

C. Sufficient clearance above the dispenser for servicing.

D. Counter can support the weight of the dispenser, the weight of the ice, and if necessary, an icemaker. The total weight may exceed 700 pounds (363 kg).

E. Sufficient clearance on the sides, top and back for icemaker ventilation and air circulation. Refer to your icemaker manufacturer for specifications.

F. If an icemaker is not top-mounted on the dispenser, make sure to provide sufficient clearance (a minimum of 6 inches (40.6 cm)) to allow filling the dispenser with ice from a five gallon (19 liter) container.

G. AVOID DIRECT SUNLIGHT AND OTHER HEAT SOURCES.

THINGS TO CONSIDER:

Connecting lines can be run through the back of the dispenser or extend down through a counter cutout. The dispenser may be installed directly on the countertop or on an optional leg kit (PN 82-3484), if no icemaker is installed. If installed directly on the counter, the dispenser must be sealed to the countertop.

UNPACKING THE DISPENSER:

A. Set shipping carton upright on the floor.

B. Cut band and remove.

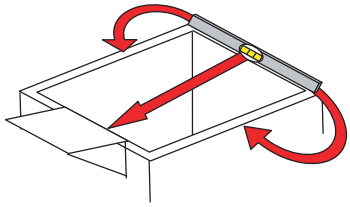
C. Open top of carton and remove interior packing.

D. Lift carton up and off of the dispenser.

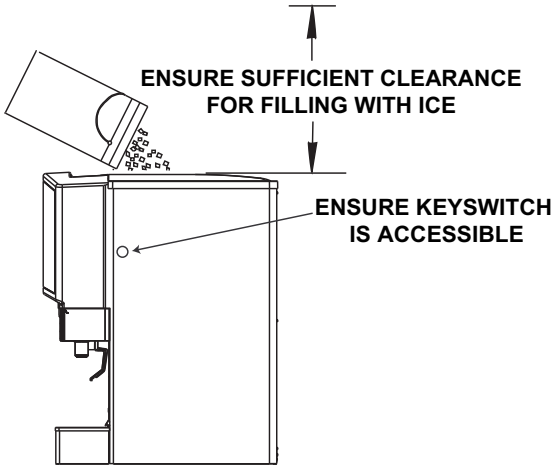
E. Remove wood shipping base from the bottom of the dispenser. Support dispenser while removing shipping base to prevent damage to the dispenser.

LEVELING THE DISPENSER:

In order to facilitate proper dispenser drainage and carbonation, ensure that the dispenser is level, front to back and side to side. Place a level on the top of the rear edge of the dispenser. The bubble must settle between the level lines. Repeat this procedure for the remaining three sides. Level unit if necessary.



FS22 DISPENSER, NO ICEMAKER



FS22 DISPENSER WITH ICEMAKER:

Install the icemaker per manufacturer specifications. Points of consideration include drainage, ventilation, and drop zones.

An adapter plate is required when installing an icemaker. Contact your Sales Representative or Lancer Customer Service for more information.

A bin thermostat is required in order to control the level of ice in the dispenser. Contact your icemaker manufacturer to obtain the correct bin thermostat.

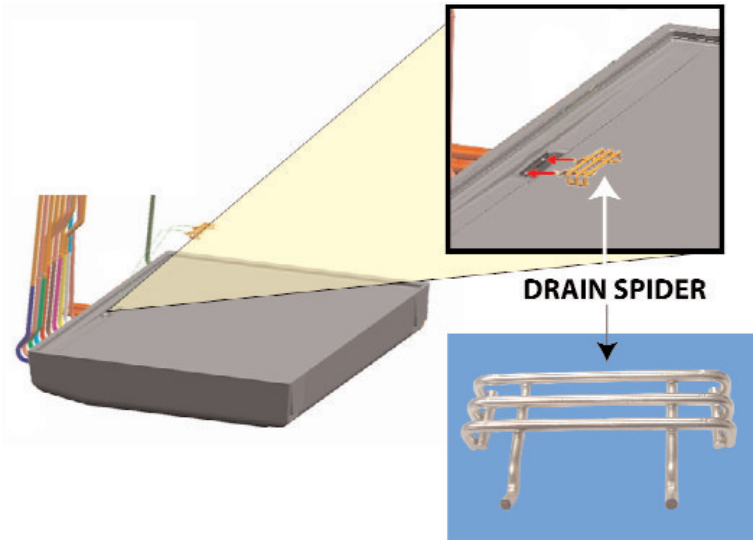
Ensure the icemaker is installed properly to allow for removal of the merchandiser.

Ensure manual fill is accessible.

Clean and maintain icemaker per manufacturer's instructions.

1.2 DRAIN SPIDER

The drain spider is located directly in the center of the bin under the ice shroud. The coldplate has a cavity designed to hold the drain spider. During shipment or installation, the drain spider may become dislodged from its original position.



Prior to installing the dispenser, ensure the drain spider is in the correct position. This will prevent drain clog issues. Inspect the lower bin area and reach under the shroud to ensure the drain spider is secure in the coldplate cutout. If the spider is not in place, proceed with the following steps:

A. Remove agitator clip and pin from agitator bar.

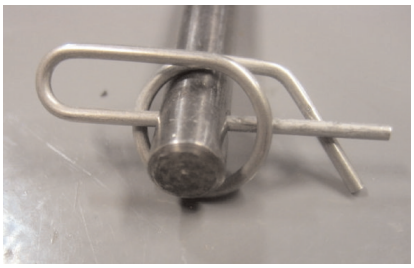
B. Remove agitator bar from paddle wheel.

C. Remove paddle wheel.

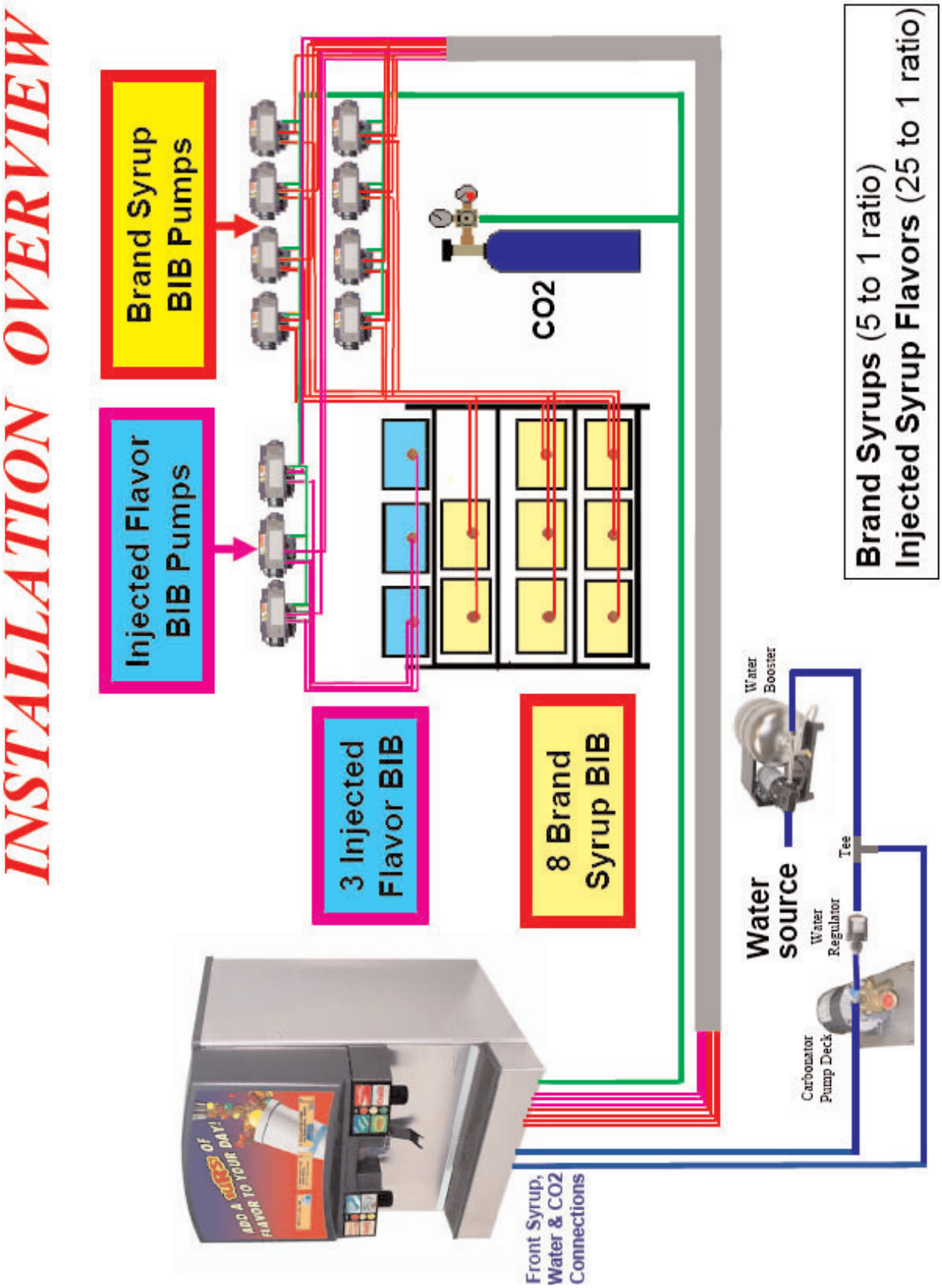
D. Remove ice shroud by lifting back then out of bin.

E. Locate drain spider and reinstall in the coldplate cavity where drain line exits (see figure above).

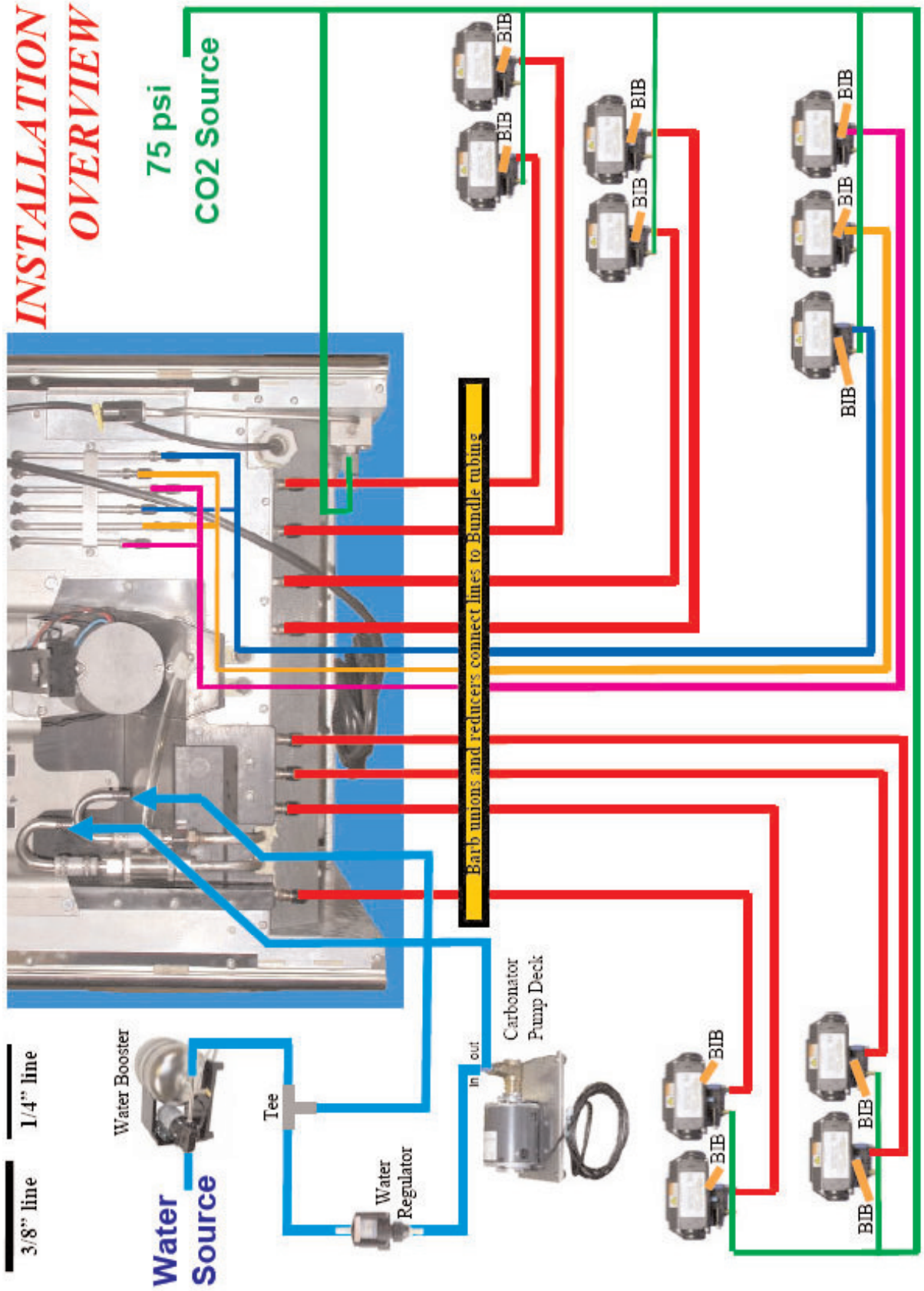
F. Reinstall all components. Ensure agitator clip is locked:



1.3 FS22 INSTALLATION OVERVIEW - 1



1.4 FS22 INSTALLATION OVERVIEW - 2



1.5 CONNECTING TO WATER SUPPLY LINES

A. Use a filter in the water line to avoid equipment damage and beverage off-taste. Check the water filter periodically, as required by local conditions.

B. Protect the water supply by means of an air gap, a backflow prevention device, or another approved method that complies with NSF standards. A leaking inlet water check valve will allow carbonated water to flow back through the pump when it is shut off and will contaminate the water supply. Ensure the backflow prevention device complies with ASSE and local standards. **It is the responsibility of the installer to ensure compliance.**

Do not operate the carbonator pump with the water supply off. Doing so can damage components and void the warranty.

C. Provide an adequate potable water supply. Water pipe connections and fixtures directly connected to a potable water supply must be sized, installed, and maintained according to federal, state, and local laws.

D. For the plain water supply line, the inlet water flowing pressure should be at least 75 PSI. If the water pressure is lower than 75 PSI flowing, use a water booster system.

   If the water flowing pressure is lower than 75 PSI at the plain water inlet and a water booster is not installed, water products will not hold a proper flow rate or water/syrup ratio. Flow conditions at the nozzle can also be affected, causing poor nozzle coning and mixing.

   NOTE: The Lancer Water Booster/Tank (PN MC-163172) is offered as a kit. The water booster must be installed as close as possible to the plain water circuit inlet.

E. For the soda water supply line, do not exceed 50 PSI for the inlet water static pressure going into the carbonator pump. If the static water pressure exceeds 50 PSI, install a water regulator before the carbonator water inlet.

   NOTE: Install the water regulator (Lancer PN 18-0306) included with unit as close as possible to the water carbonator pump inlet. The recommended water pressure value feeding the carbonator is a minimum of 25 PSI. If the normal water pressure does not exceed 50 PSI, but fluctuates over this value (for example, when water usage on other equipment connected to the same water supply causes pressure spikes), use a water regulator.

Do not connect to a hot water or soft water source. This causes excessive foaming.

1.6 CONNECTING CO_2

A. Provide a regulated CO_2 supply to the dispenser through a 3/8 inch supply line. The maximum pressure is 80 PSI.

Excessive CO2 pressure can damage components.

1.7 CONNECTING TO ELECTRICAL POWER

A. Check the dispenser serial number plate for correct electrical requirements of unit. Do not plug into a wall electrical outlet unless the current shown on the serial number plate agrees with local current available.

The dispenser must be electrically ground to avoid danger. The power cord has a three-prong grounded plug. If a three-holed grounded electrical outlet is not available, use an approved method of ensuring a proper ground to the dispenser.

1.8 INSTALLING THE FS22 DISPENSER

A. Remove the cup rest, drip tray, splash plate, and top cover from the unit.

B. Remove the cover plate at the back of the unit (if not a through-the-counter installation).

C. Connect the plain water supply line to the 3/8 inch barb fittings at the front of the unit.

For the plain water supply line, the inlet water flowing pressure should be at least 75 PSI. If the water pressure is lower than 75 PSI flowing, use a water booster system.

If the water flowing pressure is lower than 75 PSI at the plain water inlet, and a water booster is not installed, water products will not hold a proper flow rate or water/syrup ratio. Flow conditions at the nozzle can also be affected, causing poor nozzle coning and mixing.

NOTE: The Lancer Water Booster/Tank, PN MC-163172, is offered as a kit. The Water Booster must be installed as close as possible to the plain water circuit inlet.

For the soda water supply line, do not exceed 50 PSI for the inlet static water pressure going into the carbonator pump. If the static water pressure exceeds 50 PSI, install a water regulator in front of the carbonator water inlet.

NOTE: Install the water regulator (Lancer PN 18-0306) as close as possible to the water carbonator pump inlet.

The recommended water pressure value feeding the carbonator is a minimum of 25 PSI. If the normal water pressure does not exceed 50 PSI, but fluctuates over this value (for example, when water usage on other equipment connected to the same water supply causes pressure spikes), use a water regulator.

Locate pump deck as close as possible to the unit.

Install the water regulator to the inlet line of the pump deck and connect 3/8" water supply line to the inlet of the pump.

Connect 3/8" outlet carbonated water supply line to the carbonated water inlet of the unit.

Connect the harness into the pump deck and into the power supply on the unit.

D. Place the CO_2 cylinder with the CO_2 regulator in a serviceable location and route the CO_2 supply line (75 PSI) to the 3/8 inch barb fitting at the front of the unit.

E. Connect the syrup supply lines to the 3/8 inch barb inlet fittings at the front of the unit. Connect other end to BIB pumps.

F. Connect the flavor injection lines to the barb fittings at the front of the unit.

G. Install the drip tray and extend the hose to an open drain.

H. Insulate drain lines with a closed cell insulation. Ensure that the insulation covers the entire length of the drain hose, including fittings. To prevent condensation from forming, install the drain so that water does not collect in sags or other low points.

I. Install the cup rest and splash plate.

J. Connect the power cord to a grounded electrical outlet.

The bin agitation system will operate automatically. Do not place hands in the bin or the ice chute.

K. Test motor operation by pushing the ice chute.

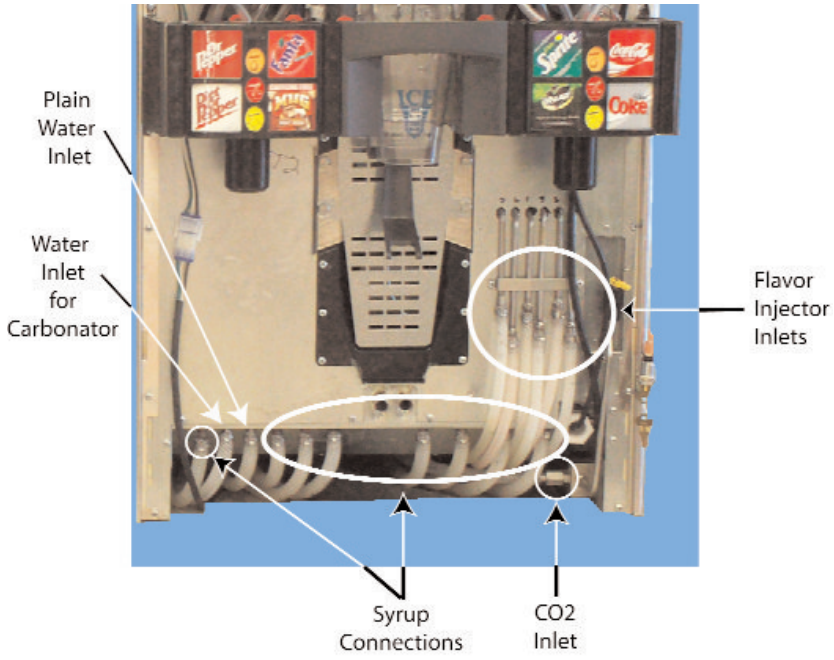
L. Clean and sanitize the dispenser (see section 2).

M. Fill the dispenser half full with ice. Test ice delivery by pushing the ice chute.

N. Fill the dispenser with ice.

O. Install the top cover.

P. Set the brix ratio for beverage dispensing valves according to the manufacturer's instructions.



WARNING!

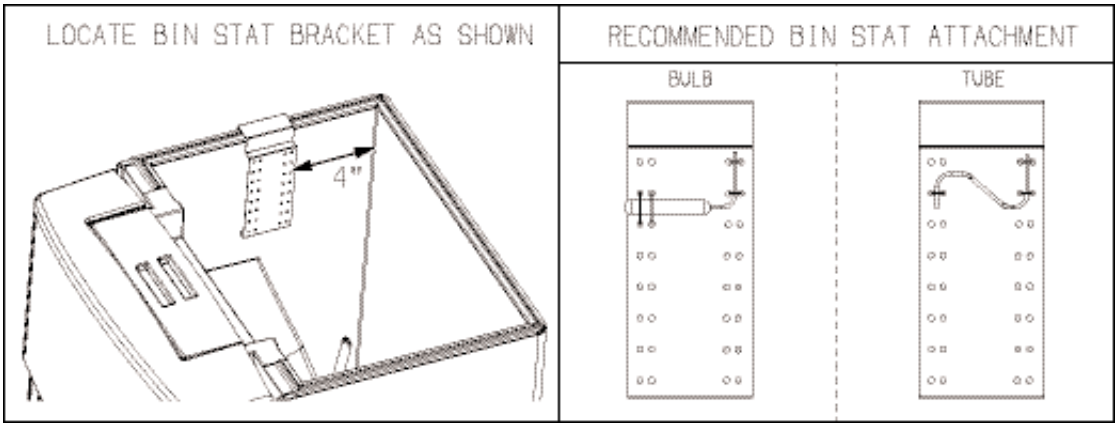
When installing an icemaker on an IBD dispenser, use a bin thermostat to control the ice level. This will prevent damage to the dispensing mechanism. the bracket for mounting a thermostat is located in the ice bin.

During the automatic agitation cycle and while dispensing ice, ensure there is adequate space between the top of the ice level and the bottom of the icemaker so the ice can move without obstruction.

Contact your icemaker manufacturer for information on a suitable bin thermostat.

WARNING!

Disconnect the dispenser from the power source before removing any parts from the bin. Automatic agitation can occur at any time.



2. CLEANING AND SANITIZING

2.1 GENERAL INFORMATION

Lancer equipment is shipped from the factory cleaned and sanitized in accordance with NSF guidelines. The equipment must be cleaned and sanitized after installation is complete. **The operator of the equipment must provide continuous maintenance as required by this manual and state and local health department guidelines to ensure proper operation and sanitation requirements are maintained.**

NOTE: The cleaning and sanitizing procedures provided in this manual pertain to the Lancer FS30 dispenser. If other equipment is being cleaned, follow the guidelines established for that equipment.

Cleaning and sanitizing should be performed by trained personnel only. Use sanitary gloves. Observe applicable safety precautions. Follow instruction warnings on the product.

DO NOT:

Disconnect water lines when cleaning and sanitizing syrup lines, to avoid contamination.

Use strong bleaches or detergents; these can discolor and corrode various materials.

Use metal scrapers, sharp objects, steel wool, scouring pads, abrasives, or solvents on the dispenser.

Use hot water above 140 degrees F (60 degrees C). This can damage the dispenser.

2.2 CLEANING AND SANITIZING SOLUTIONS

CLEANING SOLUTION: Mix a mild, non-abrasive detergent with clean, potable water at a temperature of 90 to 110 degrees F. The mixture ratio is one ounce of cleaner to two gallons of water. Prepare a minimum of five gallons of cleaning solution. Do not use abrasive cleaners or solvents because they can cause permanent damage to the dispenser. Ensure rinsing is thorough, using clean, potable water at a temperature of 90 to 110 degrees F. Extended lengths of product lines may require additional cleaning solution.

SANITIZING SOLUTION: Prepare a minimum of five gallons of sanitizing solution according to the manufacturer's recommendations and safety guidelines. Ensure the solution provides 50 to 100 parts per million (PPM) chlorine. Any sanitizing solution may be used as long as it is prepared as directed above. Extended lengths of product lines may require additional sanitizing solution.

Following sanitization, rinse with end-use product until there is no aftertaste. Do not use a fresh water rinse. This is an NSF requirement. Residual sanitizing solution left in the system creates a health hazard.

For powder sanitizers, dissolve completely with water prior to adding to the syrup system. Hot water will help dissolve powder sanitizers.

Avoid getting sanitizing solution on circuit boards.

OTHER SUPPLIES NEEDED:

- Clean cloth towels
- Bucket
- Small brush (PN 22-0017) - included with installation kit.
- Extra nozzle
- Sanitary gloves

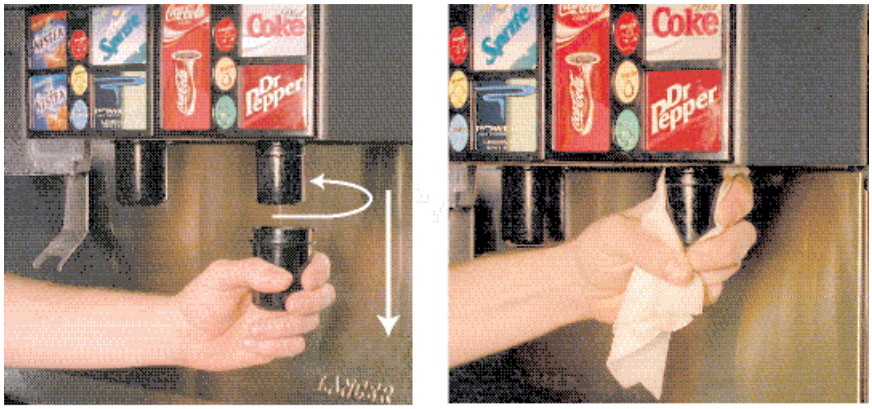
2.3 DAILY CLEANING

A. Carefully remove the nozzle housings by turning counterclockwise and pulling down from the nozzle body.

B. Wash the nozzle housings in cleaning solution and rinse with clean warm water.

C. Wet a clean cloth in cleaning solution.

D. While the nozzle housing is removed, wipe down the perimeter and end of the nozzle body.



E. Fill a cup with clean warm water and rinse nozzle body.

F. Make certain that the nozzle o-ring is not torn or otherwise damaged. If necessary, replace damaged o-ring with Lancer PN 02-0231.

G. Wet the inner surface of the nozzle housing with water and reinstall the nozzle housing by sliding it over the nozzle body and turning clockwise to lock in position.

2.4 ICE BIN CLEANING - PERFORM AT STARTUP AND MONTHLY

A. Disconnect power to the dispenser.

B. Remove the top cover.

C. Melt out any remaining ice from the bin.

D. Remove the splash plate, drip tray and front and rear bin covers.

E. Remove the agitator pin from the agitator shaft. Slide the agitator shaft rearward out of the motor shaft and pull out of the rear bearing to remove.

F. Remove the dispensing wheel from the motor shaft by sliding rearward.

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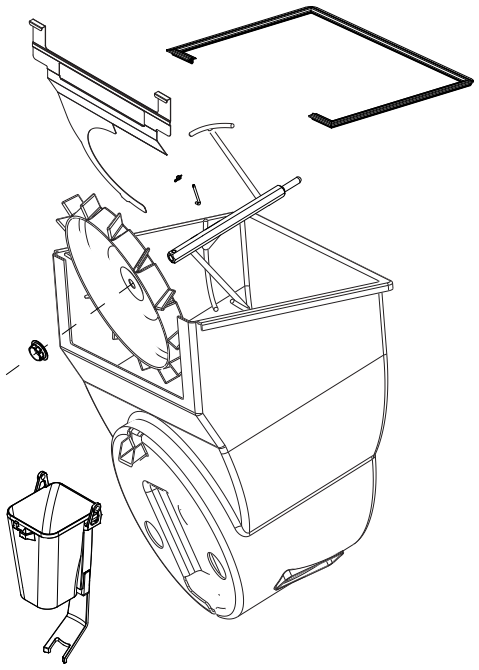
G. WHITE WHEEL SHROUD (PELLET ICE)



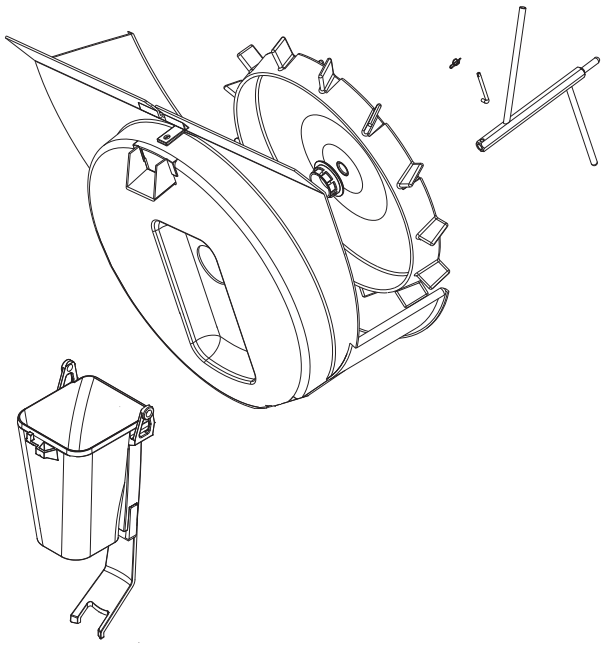
Remove the gasket which secures the shroud by pulling it out.

Push the front section of the shroud back.

Pull the shroud up and out.

Remove the lower ice chute assembly.

G. BLACK WHEEL SHROUD (CUBED ICE)



Remove the dispensing wheel shroud.

Remove the lower ice chute assembly.

H. Using the cleaning solution described in the “Cleaning and Sanitizing Solutions” section and a clean cloth or soft brush, clean all removable parts, sides of ice bin, ice chute and surface of aluminum casting.

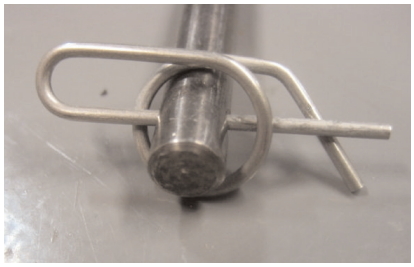
I. Using hot water, thoroughly rinse away the cleaning solution.

J. Wearing sanitary gloves, soak a clean cloth towel in sanitizing solution, described in the “Cleaning and Sanitizing Solutions” section above, and wash all surfaces of removable parts, sides of ice bin, ice chute liner, and surface of aluminum casting.

K. Wearing sanitary gloves, reassemble all removable parts.

L. Fill the unit with ice and replace the top cover.

M. Reconnect the dispenser to the power source. Ensure agitator clip is locked:



2.5 CLEANING AND SANITIZING BEVERAGE COMPONENTS - BAG-IN-BOX SYSTEMS

NOTE: Extended lengths of product lines may require more time for flushing and rinsing lines than stated below.

A. Disconnect the syrup quick disconnect coupling from the syrup packages and connect the coupling to a bag valve removed from an empty Bag-in-Box (BIB) package.

B. Place the syrup inlet line in a clean container filled with clean, potable, room temperature water. Activate the valve until water is dispensed. Flush and rinse the line and fittings for a minimum of sixty seconds to remove all traces of residual product.

C. Make the sanitizing solution. Place the syrup inlet line in a container filled with sanitizing solution.

D. Activate the valve and draw sanitizing solution through the line for a minimum of sixty seconds. This will ensure the line is flushed and filled with sanitizing solution. Allow the line to stand for at least thirty minutes.

E. Remove the bag valve from the quick disconnect coupling and reconnect the syrup inlet line to syrup package. Ready the unit for operation.

F. Draw drinks to refill the lines and to flush the sanitizing solution from the dispenser.

NOTE: Do not follow the sanitization procedure with a fresh water rinse. Purge only with end-use product until there is no aftertaste. **This is an NSF requirement.**

G. Test the dispenser for proper operation. Taste the dispensed product to ensure there is no off-taste. If off-taste is found, flush the syrup system again.

H. Repeat cleaning, rinsing, and sanitizing procedures for each valve and circuit.

2.6 ICE CHUTE CLEANING

It is recommended to perform this procedure monthly, or more often if desired. Use the cleaning solution described above. An alternate solution of one part water to one part vinegar may be used to remove water spots and calcium deposits.

A. Turn off power to the dispenser.

B. Remove merchandiser.

C. Unhook the spring from the upper ice chute by pulling up and out.

D. Remove the lower chute by carefully spreading apart the arms of the lower chute.

E. Mix the cleaning solution. Put a portion of the solution into a spray bottle. Soak the lower chute in the remaining solution.

F. Spray the upper chute with the cleaning solution.

G. With a soft sponge, clean the inside of the upper and lower chutes.

H. Rinse the lower chute thoroughly.

I. Dry the lower chute thoroughly.

J. Empty the cleaning solution from the spray bottle, then refill with plain water. Rinse the upper chute thoroughly.

K. Dry the upper chute.

L. Reinstall the lower ice chute onto the upper chute, then reinstall the spring.

M. Reinstall merchandiser.

N. Reconnect power to the dispenser.

3. HOW TO OPERATE AND ADJUST THE DISPENSER

3.1 NORMAL OPERATION

A. Fill cup with desired amount of ice.

B. Place cup under nozzle below desired brand.

C. Select up to two desired bonus flavors from those available on the keypad, by pressing against the flavor label once. Selection indicator light will illuminate, acknowledging selection.

D. Press and hold brand label to fill cup.

E. Top off cup as desired.

3.2 PROGRAMMING AND SETUP SOFTWARE

Lancer reserves the right to make changes and updates as required. If you have any questions regarding the latest versions of programs, please contact your Lancer representative.

The Lancer FS22 has been factory preset to the settings necessary to comply with the brand/flavor version of the unit requested by the customer.

Adjustments or upgrades should only be performed by trained personnel. For any upgrades, an upgrade kit may be purchased. The kit includes all of the hardware required for the upgrade, including bezels and valves.

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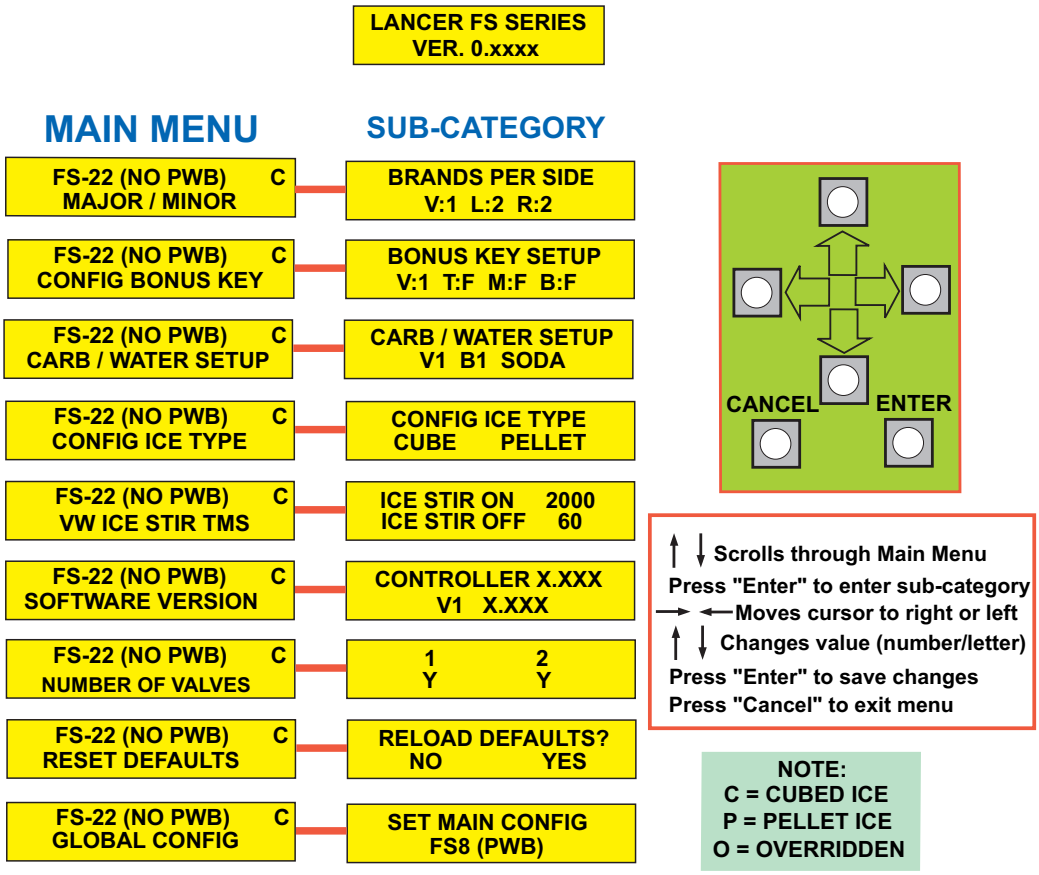
INITIALIZATION SCREEN
(BOOT UP ONLY)



Valves can be adjusted by scrolling through the menus (see figure above) using the UP and DOWN arrows. By pressing the ENTER button, a submenu is revealed. In the submenu, the individual valves can be adjusted to the desired configuration.

B. MENUS AND SUBMENUS

1. **Bonus Flavors**
    a. Decide if the bonus flavors will be set to add an injected flavor to the brands or dispense carbonated water/plain water.
    b. Choose the **V**alve number (1-2) by scrolling **UP** and **DOWN** arrows.
    c. Use the **LEFT** and **RIGHT** arrows to shift to the **T**op, **M**iddle, or **B**ottom "bonus" flavors categories.
    d. Press the **UP** and **DOWN** arrows under **T**op, **M**iddle, or **B**ottom to select it as an injected flavor, carbonated **S**oda water, or plain **W**ater.
    e. Press **ENTER** to finalize settings. Panel lights should confirm finalized configurations.
2. **Brands**
    a. Decide how the brands will be setup.
    b. Choose the **V**alve number (1-2) by scrolling **UP** and **DOWN** arrows.
    c. Use the **LEFT** and **RIGHT** arrows to shift to the **L**eft or **R**ight categories. **The Left or Right categories are set with the assumption that you are looking at them from the front.**
    d. Press **UP** and **DOWN** arrows under **L**eft (1-2) or **R**ight (1-2) to select the brand per side as a single or double. For example, for bezel PN 05-2120, V:1 L:1 R:2
3. **Soda/Water**
    a. Decide which switch locations will be carbonated and/or non-carbonated drinks.
    b. Choose the **V**alve number (2-3) by scrolling the **UP** and **DOWN** arrows.
    c. Use the **LEFT** and **RIGHT** arrows to shift to the number categories (**1-4**). **The number categories correspond to the brand location (per valve) that is being configured.**
    d. Press the **UP** and **DOWN** arrows under the number to select if that brand will be carbonated **S**oda or non-carbonated plain **W**ater. If a single brand per side, only number **1** and/or **3** need to be set.
4. **Automatic Agitation**
    a. Each Series 14400 ice beverage dispenser is equipped with automatic agitation for the ice bin. The unit is shipped with timing set at two seconds (2000 milliseconds) ON every sixty minutes for cubed ice. The unit is shipped with timing set at four seconds (4000 milliseconds) ON every 150 minutes for pellet ice.

3.3 PURGING THE CARBONATION SYSTEM

Purge the carbonator tank whenever carbonation issues occur.

A. Turn off CO_2 supply.

B. Turn off power to the unit. Unplug the carbonator harness from the power supply.

C. Open the relief valve until water is coming out. Close the relief valve, checking for any remaining air in the tank.

D. Allow the carbonator tank to fill with plain water by way of the water booster.

E. Once the tank is full, turn the power back on and purge the system by dispensing a carbonated drink. You should only get plain water as the CO_2 is still off. Dispense several times.

F. Turn on the CO_2 supply

G. Turn off the power in order to reconnect the pump harness. Turn power back on.

H. Dispense soda at valve until the carbonator pump comes on. Release the button, allow the carbonator to fill and stop (usually a few seconds). Repeat this process until the water is carbonated (about five cycles).

I. Place dispenser back into service.

NOTE: To check for CO_2 leaks, close the valve on the CO_2 cylinder and observe if the pressure to the system drops with the cylinder valve closed for five minutes. Open the cylinder valve after check.

3.4 PURGING THE WATER AND SYRUP SYSTEMS

A. Open a dispensing valve until water and syrup are flowing steadily from the valve. Repeat for each valve.

B. Check all of the dispenser's syrup and water connections for leaks and repair if necessary.

C. Replace the dispenser's splash plate and cup rest.

3.5 ADJUSTING WATER FLOW AND WATER TO SYRUP RATIO (BRIX)

The water flow can be adjusted between 3.25 oz/sec (96 ml/sec) and 4.50 oz/sec (133 ml/sec) on all dispensing valves. Ensure ice is on the cold plate for at least one hour before you brix the valves. The drink temperature should be no higher than 40 degrees F (4.4 degrees C) when the brix is set.

A. Remove merchandiser assembly.

B. If necessary, rotate switches panel forward and down by releasing the two pin latches on its sides.

C. Rotate light panel, forward and up by releasing the two pin latches on its sides towards the top.

D. Remove nozzle by twisting counterclockwise and pulling down.

E. Install Lancer syrup separator (PN 82-3458) in place of nozzle.

F. Activate dispensing valve to fill separator syrup tube.

G. Hold a Lancer brix cup under the syrup separator and dispense water and syrup into cup for four seconds. Divide number of ounces of water in cup by four to determine water flow rate per second.

H. To obtain the proper flow, remove protective cap, and use a screwdriver to adjust water flow control.

I. Repeat process for each water valve. There can be up to six gray water valves on this dispenser (up to four carbonated water valves and two plain water

valves).

J. Hold the Lancer brix cup under the syrup separator and activate valve. Check brix.

K. To obtain the proper brix, use screwdriver to adjust syrup flow control.

L. Once proper ratio is obtained, repeat to verify.

M. Repeat process for each valve.

N. Remove syrup separator.

O. Install nozzle.

P. Once all the valves have been brixed, restore switches panel and light panel to their original positions.

3.6 CARBONATOR PUMP MODIFICATIONS

The electric, positive displacement rotary vane pump with 170 PSI bypass should only be serviced by trained personnel. To achieve optimum carbonation, use filtered water with the pump.

A. Turn off power to the dispenser.

B. Remove drip tray and splash plate.

C. Turn off water.

D. Turn the CO2 off, activate the relief valve.

E. Once the pressure has been released, untighten the inlet/outlet nuts on the pump.

F. Unscrew the mounting bracket.

G. Part should easily slide out for replacement or maintenance.

4. TROUBLESHOOTING

TROUBLE	CAUSE	REMEDY
4.1 No product when switch is activated. (Switch panel does not light up when activated.)	A. Keyswitch is off, or keyswitch harness is disconnected. B. 9-in valve harness is disconnected. C. Defective switch assembly. D. No power to unit.	A. Turn keyswitch on and/or reconnect keyswitch harness. B. Turn off power, reconnect 9-pin harness, and restore power. C. Replace switch assembly. D. Check internal breaker and incoming power.
4.2 No product when switch is activated. (Switch panel does light up when activated.)	A. 25-pin valve harness is disconnected. B. Defective switch assembly.	A. Turn off power, reconnect 25-pin harness, and restore power. B. Replace switch assembly.
4.3 Push chute and nothing happens.	A. Dispenser not connected to power source. B. Microswitch defective. C. Wiring harness not plugged in. D. PC board defective.	A. Connect dispenser to power source. B. Replace microswitch. C. Plug in wiring harness. D. Replace PC board.
4.4 Push chute. Ice door opens but motor does not run.	A. Wiring harness not plugged in. B. PC board defective. C. Motor defective.	A. Plug in wiring harness. B. Replace PC board. C. Replace motor.
4.5 Push chute. Motor runs but ice door does not open.	A. Solenoid not connected to PC board. B. Solenoid defective. C. PC board defective. D. Solenoid bracket screwed too low and not opening completely.	A. Connect solenoid to PC board. B. Replace solenoic. C. Replace PC board. D. Unscrew solenoid bracket, raise solenoid and rescrew bracket.
4.6 Push chute, ice door opens, motor runs, but no ice dispenses, or ice is of poor quality.	A. Dispenser is out of ice. B. Agitator pin is missing or damaged. C. Poor ice quality.	A. Fill unit with ice. B. Replace agitator pin. C. Install water filtration/purification to icemaker supply water.

CONTINUED ON NEXT PAGE

TROUBLE	CAUSE	REMEDY
4.7 Valves do not operate.	A. Keyswitch is off, or keyswitch harness is disconnected. B. Circuit breaker tripped. C. Unit not plugged in.	A. Turn keyswitch and/or make sure keyswitch harness is connected. B. Reset circuit breaker. C. Plug in dispenser.
4.8 Water in ice bin.	A. Coldplate drain is obstructed.	A. Remove splash plate to obtain access to drain tubes and clear accordingly.
4.9 Water leakage around nozzle.	A. Damaged or improperly installed o-ring on nozzle.	A. If damaged, replace. If improperly installed, adjust.
4.10 Miscellaneous leakage.	A. Gap between parts. B. Damaged or improperly installed o-rings.	A. Tighten appropriate retaining screws. B. Replace or adjust appropriate o-rings.
4.11 Noisy/cavitating carbonator pump.	A. Insufficient incoming water supply pressure.	A. Verify incoming supply water pressure to carbonator pump is a minimum of 25 PSI (max 50 PSI).
4.12 Insufficient soda flow (carbonated drinks).	A. Insufficient CO2 supply pressure. B. Shutoff on mounting block not fully open. C. Foreign debris in soda flow control.	A. Verify incoming CO2 pressure between 70-75 PSI. B. Open shutoff fully. C. Remove soda flow controlf rom valve and clean out any foreign material to ensure smooth spool movement.
4.13 Insufficient water flow (plain water).	A. Insufficient incoming supply pressure. B. Shutoff on mounting block not fully open. C. Foreign debris in water flow control. D. Water filtration problem.	A. Verify incoming supply water pressure to plain water inlet is a minimum of 70 PSI (max 125 PSI). B. Open shutoff fully. C. Remove water flow control from valve and clean out any foreign material to ensure smooth spool movement. D. Service water system as required.

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TROUBLE	CAUSE	REMEDY
4.14 Insufficient syrup flow.	A. Insufficient CO2 pressure to BIB pumps.	A. Adjust CO2 pressure to 80 PSI (min 70 PSI) for BIB pumps.
	B. Shutoff on mounting block not fully open.	B. Open shutoff fully.
	C. Foreign debris in syrup flow control.	C. Remove syrup flow control from valve and clean out any foreign material to ensure smooth spool movement.
	D. Defective BIB pump.	D. Replace pump.
4.15 Erratic ratio.	A. Incoming water and/or syrup supply not at minimum flowing pressure.	A. Check pressure and adjust.
	B. Foreign debris in water and/or syrup flow control.	B. Remove flow control from suspected valve and clean out any foreign material to ensure smooth spool movement.
	C. CO2 regulator malfunction.	C. Repair or replace CO2 regulator as required.
4.16 Water only dispensed, no syrup. Or syrup only dispensed, no water.	A. Syrup BIB empty.	A. Replace syrup BIB as required.
	B. Water or syrup shutoff on mounting block not fully open.	B. Open shutoff fully.
	C. Improper or inadequate water or syrup supply.	C. Remove valve from mounting block, open shutoff slightly and check water and syrup supply. If no supply, check dispenser for other problems. Ensure BIB connection is engaged.
	D. CO2 pressure to syrup pump too low.	D. Check the CO2 pressure to the pump to ensure it is between 70-80 PSI.
	E. Stalled or inoperative BIB pump.	E. Check CO2 pressure and/or replace pump.
	F. Kinked line.	F. Remove kink or replace line.
	G. CO2 regulator malfunction.	G. Repair or replace CO2 regulator as required.

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TROUBLE	CAUSE	REMEDY
4.17 Valve will not shut off.	A. Debris in solenoid seat.	A. Activate valve a few times to free debris. Remove the solenoid coil and plunger and clean out foreign material.
	B. Solenoid plunger sticking.	B. Replace solenoid coil.
4.18 Syrup only dispensed. No water, but CO2 gas dispensed with syrup.	A. Improper water flow to dispenser.	A. Check for water flow to dispenser.
	B. Carbonator pump motor has timed out. (A message will be displayed on the LCD screen.)	B. Reset by turning the unit off and then of by using the circuit breaker on the power supply, or momentarily unplugging unit.
	C. Liquid level probe not connected properly to PCB.	C. Check connections of liquid level probe to PCB assembly. Replace PCB assembly.
	D. Defective PCB assembly.	D. Replace PCB assembly.
	E. Defective liquid level probe.	E. Replace liquid level probe.
4.19 Excessive foaming.	A. No ice in bin.	A. Fill bin with ice and allow coldplate to restabilize.
	B. Incoming water or syrup temperature too high.	B. Correct prior to dispenser.
	C. CO2 pressure too high.	C. Adjust CO2 pressure downward, but not less than 70 PSI.
	D. Water flow rate too high.	D. Readjust and reset ratio.
	E. Nozzle and diffuser not clean.	E. Remove and clean.
	F. Air in BIB lines.	F. Bleed air from BIB lines.
4.20 Water continually leaking at connections.	A. Loose water connections.	A. Tighten water connections.
	B. Flare seal washer leaks.	B. Replace flare seal washer.
4.21 Water leaking from ice door.	A. Securing screws loosened.	A. Tighten screws.
	B. Ice door improperly seated.	B. Reattach door assembly to dispenser.

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TROUBLE	CAUSE	REMEDY
4.22 Circuit breaker tripping.	A. Valve wire harnesses shorted to itself or faucet plate.	A. Detect short by disconnecting valve harnesses from switch panel (2 25-pin harnesses and 2 9-pin harnesses). Restore power. If breaker does not trip, then find and replace shorted harness. If breaker still trips, reinstall the eight harnesses and proceed to Step B.
	B. Controller PCB is bad.	B. Detect by disconnecting the white 5-pin harness from the controller PCB. Restore power. If breaker does not trip, then replace controller PCB. If breaker still trips, reinstall the white 5-pin harness and proceed to Step C.
	C. Secondary wire harness is shorted.	C. Locate short from a motor or solenoid harness and replace as necessary.
	D. Power supply is bad.	D. Detect short by disconnecting all harnesses connected to power supply. Restore power. If breaker still trips, replace power supply.
4.23 BIB pump does not operate when dispensing valve is opened.	A. Out of CO2, CO2 not turned on, or low CO2 pressure.	A. Replace CO2 supply, turn on CO2 supply, or adjust CO2 pressure to 70-80 PSI.
	B. Out of syrup.	B. Replace syrup supply.
	C. BIB connector not tight.	C. Fasten connector tightly.
	D. Kinks in syrup or gas lines.	D. Straighten or replace lines.
4.24 BIB pump operating, but no flow.	A. Leak in syrup inlet or outlet line.	A. Replace line.
	B. Defective BIB pump check valve.	B. Replace BIB pump.
4.25 BIB pump continues to operate when bag is empty.	A. Leak in suction line.	A. Replace line.
	B. Leaking o-ring on pump inlet fitting.	B. Replace o-ring.
	C. Defective syrup BIB pump.	C. Replace defective pump.

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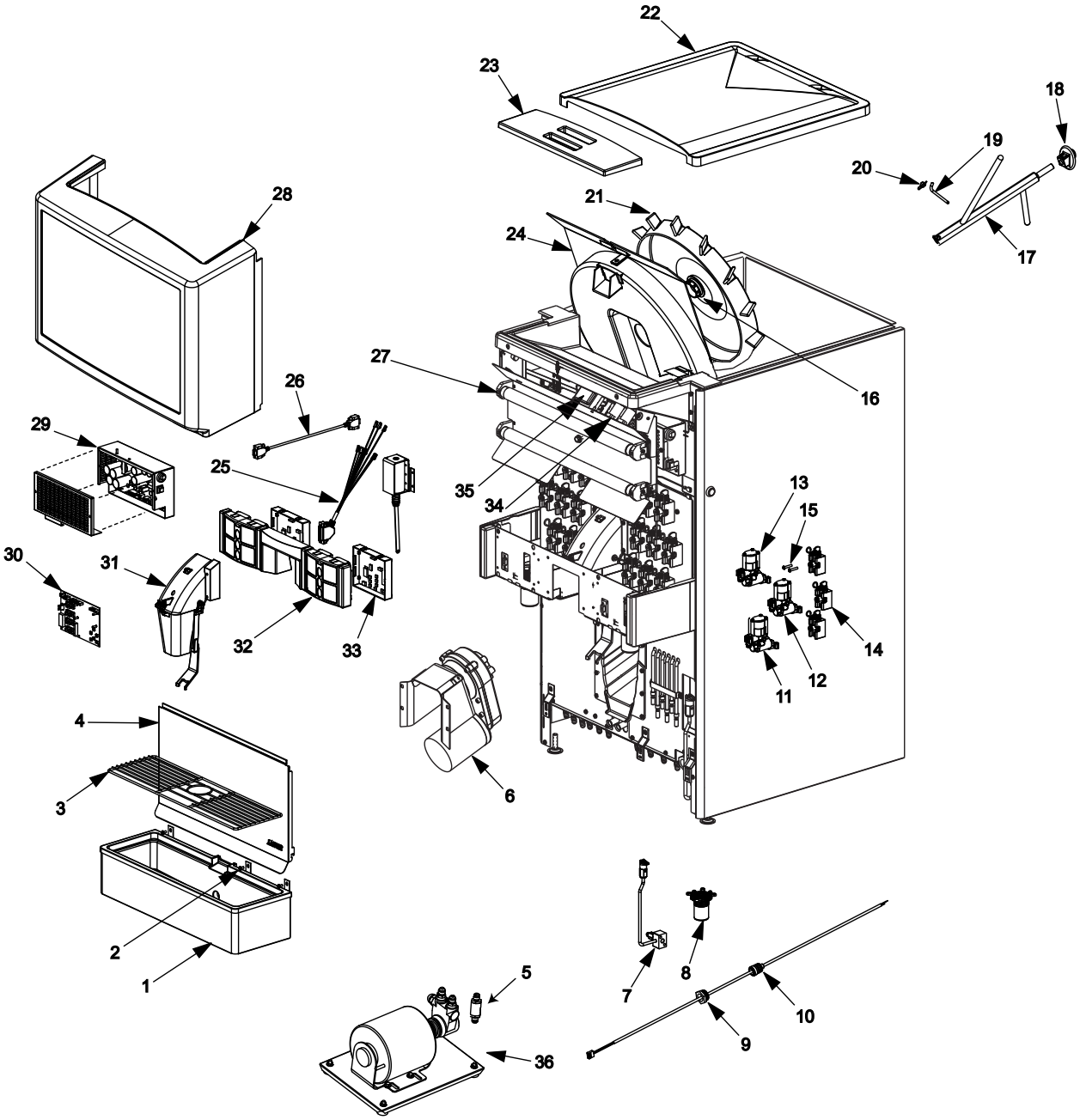
5. ILLUSTRATIONS, PARTS LISTINGS AND WIRING DIAGRAMS

5.1 FINAL ASSEMBLY



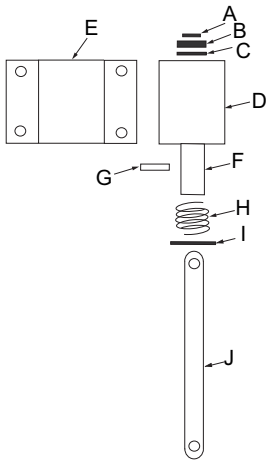
5.1 FINAL ASSEMBLY - PARTS LIST

Part No. **Description**

85-14408-06-2 **IBD, ACMB, 22'', 150#, 8/6, LFCV, Cubed**

85-14408N-06-2 **IBD, ACMB, 22'', 150#, 8/6, LFCV, Pellet**

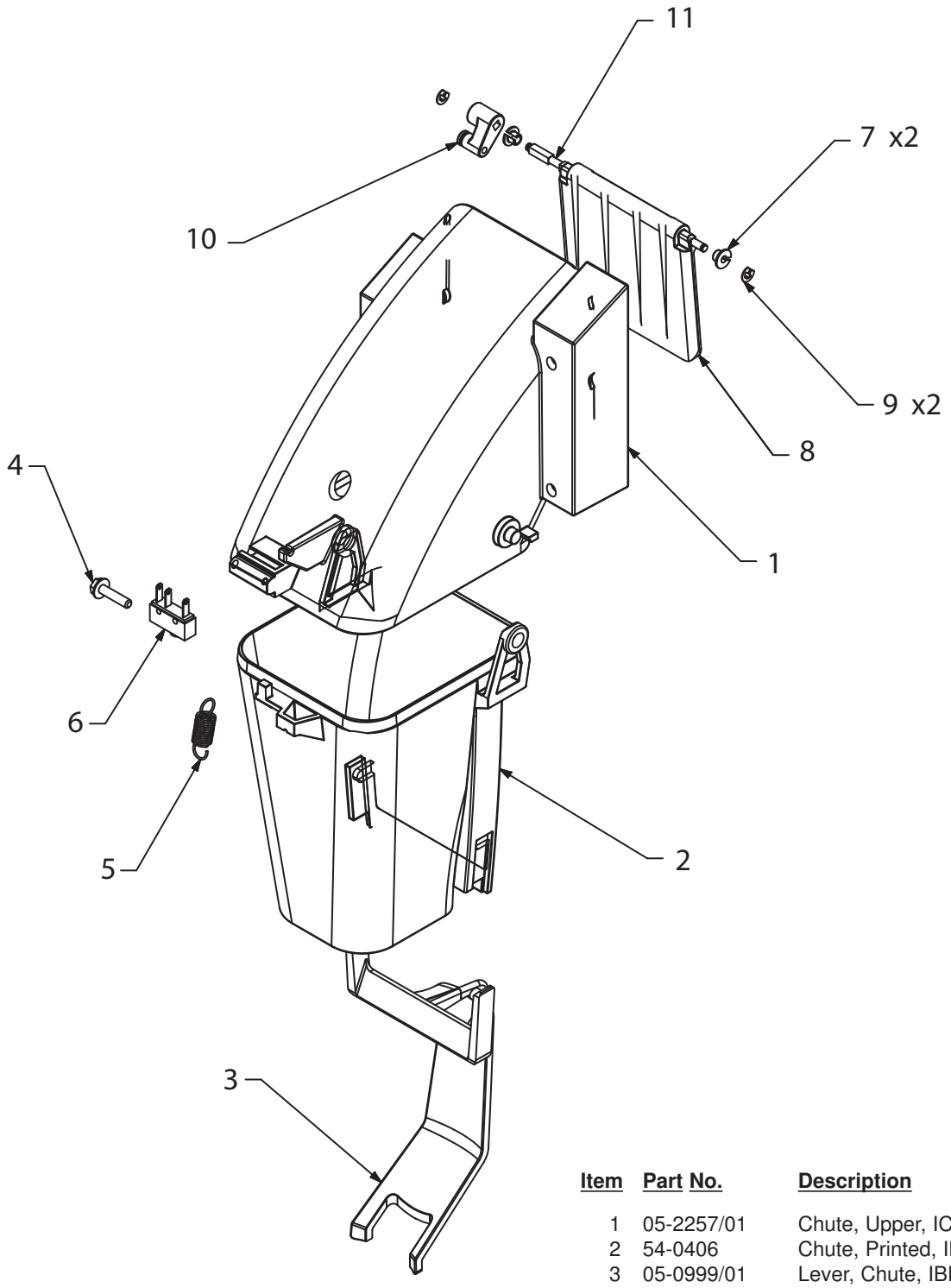
Item	Part No.	Description
1	82-3441/01	Drip Tray Assy, IBD22
2	04-0236	Screw, 10-24 x 0.375, PHD, PH, MS, SS
3	23-0969/01	Cup Rest, Wire, 22", IBD
4	30-9194	Splash Plate, FS-8
5	17-0611.	Check Valve, Vented, 5/8-18
6	82-3688/01	Motor Assy, Gear, 115V, 1/7HP, IBD
	91-0165/01	Motor, Agitator, 562, 115V, 4RPM, IBD
7	82-3370	CO_2 Assy, Inlet/P-Off, FS-16
	54-0066	Relief Valve Assy, Plastic
8	54-0289	Nozzle Assy, Multi-Flavor
9	01-2214	Nut, Swivel, Probe, Carb, FS-16
10	52-2751/02	Probe Cord Assy, Carb, FS-16
11	82-3820	Valve Assy, LFCV, .2 Syrup Injection, Natural (Spare with Adapter)
12	82-3824	Valve Assy, LFCV, 3.0 - 4.5, Soda/Water, Gray (Spare with Adapter)
13	82-3823	Valve Assy, LFCV, 3.0 - 4.5, Syrup, Black (Spare with Adapter)
14	82-2317/01	Block Mounting Assy, SGL
15	04-1089	Screw, 10-32 x 1.000, RH, PH/SL
16	02-0406/01	Seal, Shaft, Motor, IBD
17	23-1373	Agitator Assy, FS/IBD, HEX
18	54-0472	Bearing, Agitator, Rear, IBD
19	10-0762	Pin, Hex Design, FS-16
20	03-0368	Retainer, Pin, Agitator, IBD
21	82-3556	Dispensing Wheel Assy, Hex
22	05-1467	Lid, Back, IBD22, RND
23	05-1476/01	Lid, Front, IBD, RND
24	05-1309/02-01	Shroud, Dispensing Wheel, MOD, IBD
25	52-2985	Harness, Valve 25-pin, FS-16, Sealed
26	52-2686	Harness, Control-To-Valve, 9-pin, M/F, FS-8
27	12-0146/01	Lamp, 18", 5W, T8, Daylight
28	82-3771	Merchandiser, Assy, FS-22
-	06-2994-02	Graphic, FS-22, Brilliant Yellow
29	82-3664	Assy, Power Supply, FS-8
30	52-2820/01	PCB Assy, FS-IBD Controller Board
31	82-3538/01	Ice Chute Assy, IBD30, Pellet
32	05-2058	Bezel, M-Brand, 2L/2R
33	82-3630	Switch Assy, FS, 2L/2R
34	12-0104	Starter, with Condenser, IBD
35	12-0188	Ballast, Fluorescent Light, LC-14-20-C
36	82-3791	Pump Assy, Remote, FS22, 1/3 HP
	86-0084	Pump Assy
	91-0008	Motor, Carb 1/3 HP



ICE DOOR SOLENOID ASSEMBLY (AT LEFT):

A	03-0086	Ring, Retaining (5304-18)
B	04-0328	Washer, Rubber
C	04-0327	Washer, Flat
D	12-0195	Solenoid, D-90
E	30-5165	Bracket, Solenoid
F	23-1380	Plunger Assy
G	10-0496	Pin, Solenoid Assy
H	03-0110	Spring, Solenoid
I	03-0111	Ring, Retaining (5133-62)
J	30-8356	Linkage, Door, FS

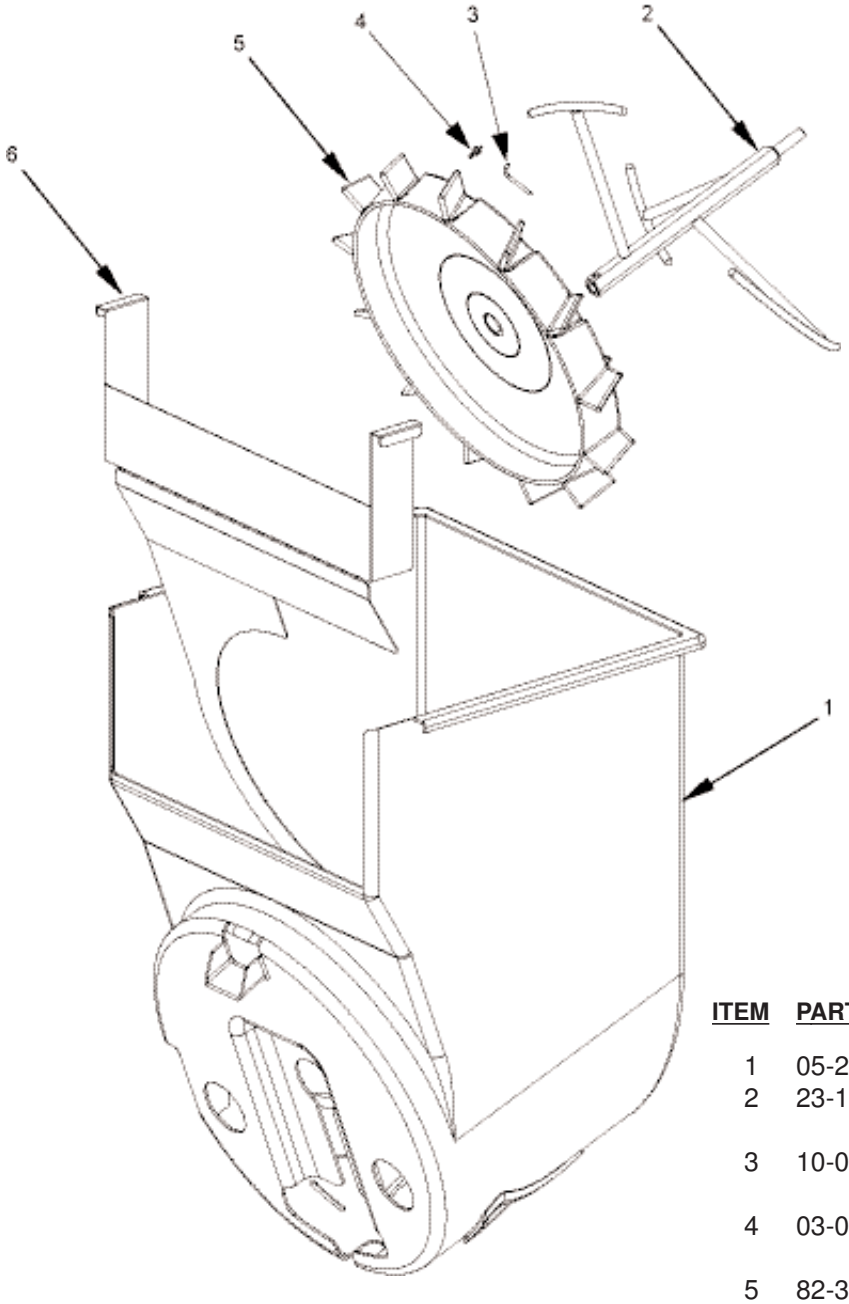
5.2 ICE CHUTE ASSEMBLY



Item	Part No.	Description
1	05-2257/01	Chute, Upper, IC
2	54-0406	Chute, Printed, IBD
3	05-0999/01	Lever, Chute, IBD
4	04-0268	Scr, 6-19X.625 LG, PLSTI,HHSW/W
5	03-0241	Spring, Chute, IBD
6	12-0244	Switch, SPST, 5A, 250V, MDM
7	05-0359	Bushing, .123 ID x .187 OD, NYLN
8	05-0928/02	Trap Door, IBD
9	03-0113	Ring, Retaining
10	05-0546	Lever, Door
11	10-0732	Shaft, Ice Chute Door, IC

5.3 PELLET ICE ASSEMBLY AND PARTS LISTING

Use the components listed on this page with pellet ice only.

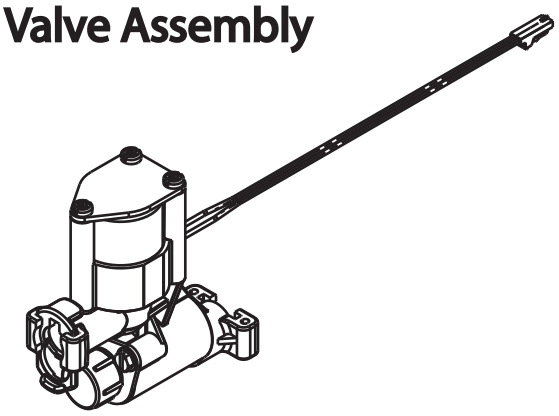


ITEM	PART NO.	DESCRIPTION
1	05-2325/01	Ice Shroud, IC
2	23-1401/01	Agitator Assy, Helical, IC
3	10-0762	Pin, Hex Design, FS-16
4	03-0368	Retainer, Pin, Agitator, IBD
5	82-3651	Dispensing Wheel Assy, Pellet Ice
6	30-9801/01	Shield, Nugget, IC

5.4 LANCER FLOW CONTROL VALVE (LFCV)

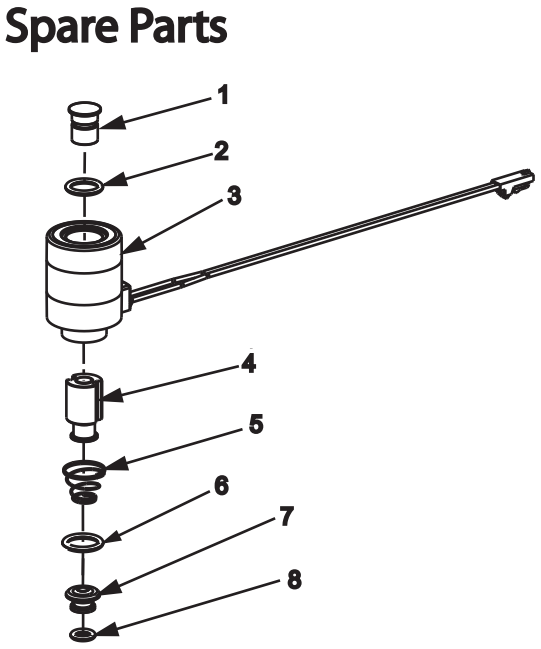
LFCV VALVE ASSEMBLIES

82-3820	LFCV, BONUS INJECTOR
82-3823	LFCV, 3.0 - 4.5, SYRUP ASSY
82-3824	LFCV, 3.0 - 4.5, SODA/WATER ASSY



LFCV SPARE PARTS

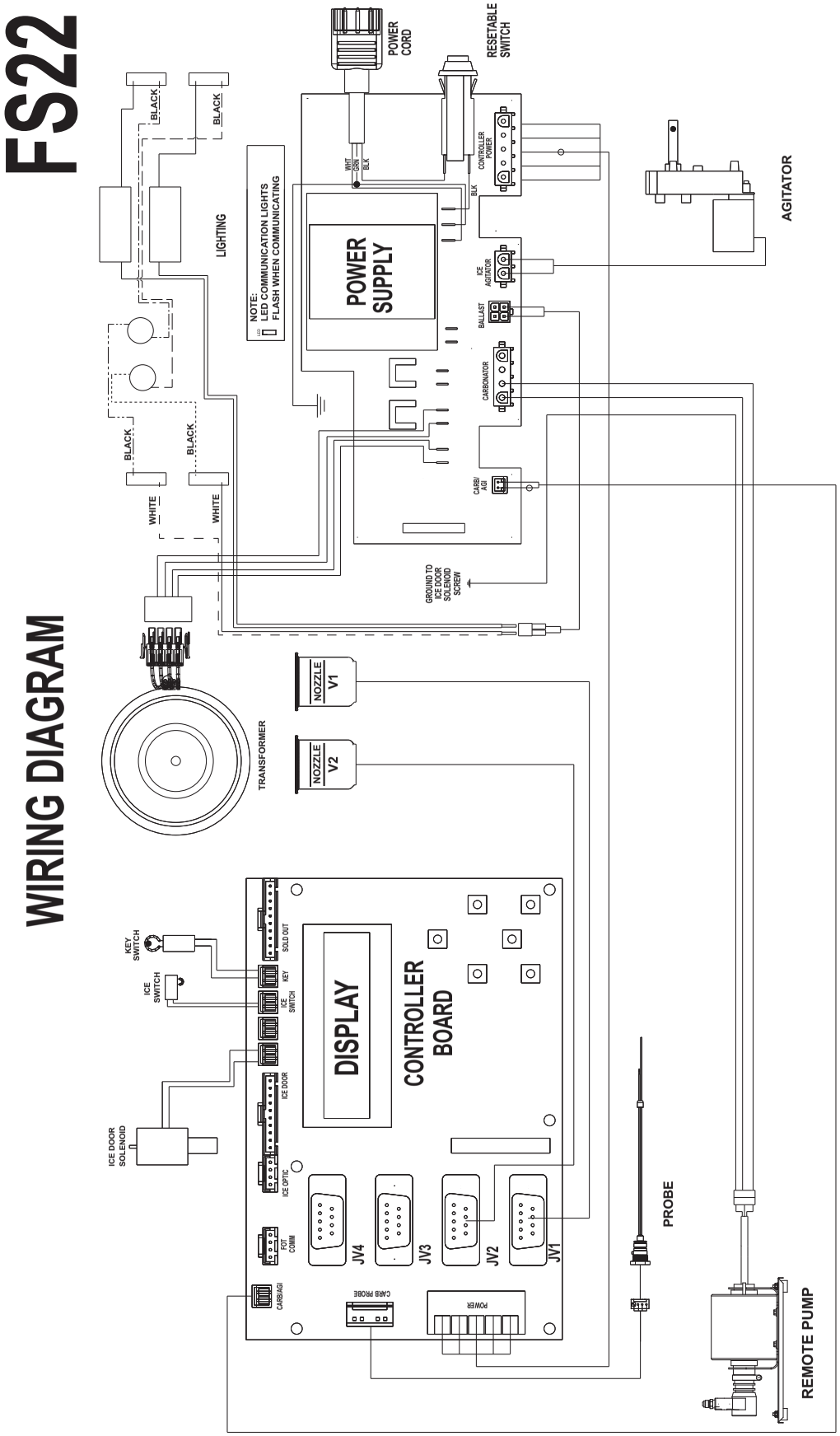
1	10-0430/05	PLUG NUT
2	02-0538	O-RING
3	12-0364/04-01	COIL, LFCV
4	23-1301/01	CORE SEAL ASSY
5	03-0180/02	SPRING, CORE
6	02-0109	O-RING
7	05-1745/02	SEAT, LFCV
8	02-0133	O-RING



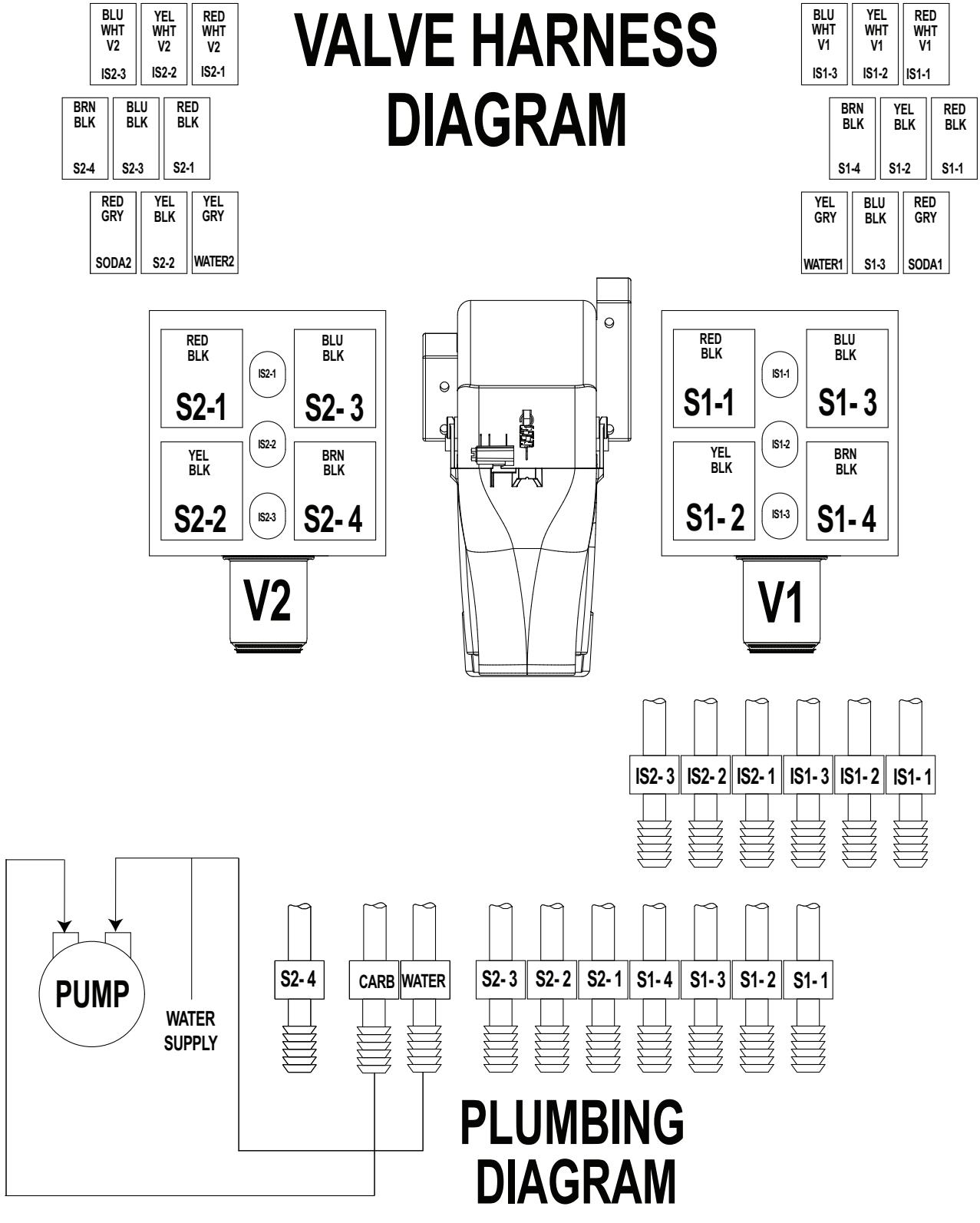
LFCV KIT

82-4020	LFCV REBUILD KIT

5.5 WIRING DIAGRAM



5.6 PLUMBING DIAGRAM WITH VALVE WIRING



NOTES

LANCER
To order parts, call
Customer Service: 800-729-1500
Warranty/Technical Support: 800-729-1550
Email: custserv@lancercorp.com
www.lancercorp.com